IEC’s MICROBIOLOGICAL MONITORING ACTIVITIES

NJ Water Monitoring Council Meeting
January 31, 2007

Presented by: Boris Rukovets, Asst. Executive Director
DISCUSSION ITEMS

- Role of IEC
- IEC Water Quality Monitoring Program
- Recent Microbiological Monitoring Projects
IEC’s DISTRICT

- 3 States – NY, NJ, CT
- Created in 1936
  - First Interstate Env’t Agency
- >13 million people; ~ 800 mi²
- 80 WPCPs; 2.5 BGD
- ~650 CSOs
- EPA Regions 1 and 2
- 2 NEPs – LISS and NY/NJ HEP
IEC’s KEY FUNCTIONAL AREAS

- Use enforcement and regulatory powers on both interstate and intrastate basis
- Provide technical assistance and support to IEC’s Member States, US EPA and others
- Enhance public and legislative awareness, and disseminate information
- Coordinate interstate and region-wide programs
- Ambient and point source monitoring
- Emergency response
IEC’s WATER QUALITY MONITORING PROGRAM

• Effluent Monitoring - NPDES Compliance:
  - Public and private sewage treatment plants
  - Industries
  - CSOs and MS4s

• Ambient Monitoring:
  - Water Quality surveys in support of NEP Programs
  - Sampling of Shellfish Waters for ISSP Compliance
  - Emergency Response Surveys
    - Impact of POTW bypasses on shellfish beds (NYC Blackout)

• Special Projects:
  - Investigation of point and non-point sources of pollution in bi-state waterways
  - Bacterial contamination trackdown (Great Kills)
IEC’s EFFLUENT MONITORING NETWORK

- 80 secondary WPCPs

- Check Compliance w. NPDES and IEC Water Quality Regulations

- Parameters:
  - BOD
  - TSS
  - Fecal Coliform
  - pH
Sampling of Shellfish Harvesting Waters of Western Raritan Bay

- 1995-2007 winter/spring seasons
- Sanitary conditions of shellfish beds – US FDA NSSP
- PPA NJ DEP/US EPA
- 22 stations, wet weather only
- Parameters: Temp., Fecal & Total Coliform
BACKGROUND:
- EPA 1986 Bacteria Criteria
- Passage of BEACH Act in 2000
- Support of TMDL development for fecal coliform and enterococcus for NY-NJ Harbor
- Regional Water Quality Model

SCOPE:
- 60 ambient monitoring stations
- WPCP effluents

KEY PARAMETERS:
- Enterococcus
- Fecal and Total Coliform
PATHOGENS MONITORING FOR NY-NJ HEP (Cont.)

- IEC’s WORK (2001-2004):
  - Year 1 and 2:
    - 20 sampling runs (21% wet weather; year round)
    - 42 stations in NY/NJ Harbor (Hudson River, East River, Raritan Bay and the Kills)
  - Year 3:
    - 14 additional wet weather runs at 46 stations in NY/NJ Harbor, year-round
    - 6 additional wet weather runs at 15 stations in Newark Bay Complex
  - Year 4:
    - Sampling of POTW and MS4 inputs to the NY-NJ Harbor (jointly w. NYC DEP and NJ Harbor Dischargers Group)
HUDSON RIVER TRANSECTS MONITORING (2005-06)

- Objective: Compare pathogens east and west of mid-river to those at mid-river

- 25 Stations
  - 5 transects x 5 stations

- 4 Wet weather events
  - 2 consecutive days each

- Collaboratively w. NJDEP

- Parameters:
  - Fecal Coliform
  - Total Coliform
  - Enterococcus
HUDSON RIVER TRANSECTS MONITORING (Cont.)

• ANALYSES
  - Geometric Means Comparison
  - Individual Results Comparison
  - Analysis of Means (t-test) and Variances (F-test)

• CONCLUSION
  - Geometric means (but not individual values) of mid-river points provide an appropriate representation of water quality in the Hudson River
BYRAM RIVER PATHOGENS TRACKDOWN

- Multi-agency effort (2003-06)

- Workplan:
  - Identification of dry weather overflows/shoreline survey
  - Analyses of sources
  - Trackdown

- Parameters:
  - Fecal Coliform
  - Total Coliform
  - Enterococcus

- Identified and eliminated multiple illegal connections
FUTURE PROJECTS

- Mid-Hudson River Pathogens Monitoring (2007-2008)
- Impact of Summer Temperatures on Elevated Level of Entero at Silver Sands Park Beach in LIS Area (2007)
Questions?